REMARKS

Applicants express their appreciation to Examiner Paul Huber for the courtesy of an interview which was granted to Applicant Joel Vidal and Applicants' representative, Sanford T. Colb, Reg. No. 26,856.

The interview was held in the USPTO on September 6, 2000. At the interview, it was pointed out that the cited prior art to Galbi does not show or suggest the provision of a compact disk player for reading MPEG data, particularly in "real time".

The present amendment carries out those changes to the claims which the Examiner indicated render the claims allowable over the prior art of record.

Applicants have carefully studied the outstanding Official Action The present response is intended to be fully responsive to all points of rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of the application are respectfully requested.

The title has been amended to reflect amendments to the claims.

Claims 1, 2, 4, 5, 7 - 11, 19, 20, 22, 23, 25 and 26 stand rejected under 35 U.S.C. 102(e) as being anticipated by Galbi. Claims 12, 13, 15 - 17, 27, 29, 30 and 32 - 34 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Galbi in view of Hisamatsu et al. Claims 14, 18, 28 and 31 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Galbi and Hisamatsu et al, further in view of the publication

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"Frequently Asked Questions about MPEG Audio Layer-3".

Galbi describes a method for decoding MPEG audio data. As noted in the interview, Galbi does not show or suggest reading MPEG-encoded data written to compact disks. There is nothing in Galbi to suggest using anything other than a conventional computer to carry out this task.

Hisamatsu et al describes an automatic editing/recording device and dubbing system loaded with the device. Hisamatsu et al does not even mention MPEG, but rather employs MDCT, which is inferior to MPEG.

The publication "Frequently Asked Questions about MPEG Audio Layer-3" is questionably prior art in terms of its date. In any event, taken individually or in combination with the remaining prior art of record, it does show or suggest real-time MPEG layer 3 decoding as claimed herein.

In view of the foregoing amendments, all of the remaining claims are deemed to be allowable. Favorable reconsideration and allowance of the application is respectfully requested.

Respectfully submitted,

Date: October 23, 2000
       New York, New York

GOTTLIEB RACKMAN & REISMAN PC
Attorneys for Applicant
270 Madison Avenue
New York, New York 10016-0601
Telephone: 212 684 3900
Telefax: 212 684 3999

BY: _____
    RUBENSTEIN, Allen I.
    Reg. No. 27,673

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Fraunhofer Institut
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MPEG Audio Layer-3

- Actual News about **MPEG Audio Layer-3** on our AUDIO-Page

DEMO SOFTWARE: MPEG Audio Layer-3

- **MPEG Audio Layer-3:** Windows Realtime Player **WinPlay3**!
  Actual version: 2.3beta5. See AUDIO-Page momentary !
- **MPEG Audio Layer-3:** Mac Realtime Player **MPEGLayer3Player**!
  Actual version: 1.4beta2. See AUDIO-Page momentary !
- **MPEG Audio Layer-3:** Shareware Encoder and Decoder
  Commandline tools: PC/MS-DOS, SUN, SGI, PC/Linux,
  PC/SUN/HP/NeXT/NeXTSTEP3.3

INFORMATION: ISO MPEG Layer-3 Compression Technology

Music Coding:
- MPEG Audio Layer 3: High-Quality Low-Bitrate Music Links via
  Telecommunication Networks
- MPEG Audio Layer 3: High-Quality Low-Bitrate Music in Multimedia Applications
- MPEG Audio Layer 3: Multichannel Audio Coding

Copyright Protection (IPR: Intelectual Property Rights)

- MMP: The Multimedia Protection Protocol

MPEG Audio Layer 3: Shareware Encoder and Decoder

Version 2.71 was released on August 27, 1997.

With our shareware codec you may exploit the highest quality of perceptual audio coding technology available today.
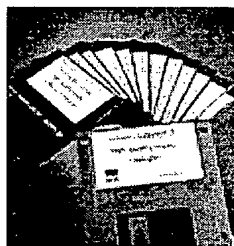
The shareware is currently available for:

- For PCs running MS-DOS: `l3v271dl.zip` encoder, decoder and documentation
- For SUN workstations running SunOS 4.1: `l3v271.sun4.tar.gz` encoder, decoder and documentation
- For SUN workstations running SunOS 5.5 (Solaris): `l3v271.solaris.tar.gz` encoder, decoder and documentation
- For SGI workstations: `l3v271.sgi.tar.gz` encoder, decoder and documentation
- For PCs running Linux: `l3v271.linux.tar.gz` encoder, decoder and documentation
- For PCs, Suns, HPs or NeXT-Computer running NeXTSTEP 3.3: `l3v271.next.tar.gz` encoder, decoder and documentation

You can test the shareware with the following free bit streams:

- bit streams for PCs (as .zip archive)
- same bit streams for Unix (but as .tar.gz archive)

For more information you could also try the MPEG Audio Layer 3 FAQ or look on the `l3dec` manual page / `l3enc` manual page

Please contact l3share@iis.fhg.de for more information.

MPEG Audio Layer 3: High-Quality Low-Bitrate Music Links via Telecommunication Networks

In 1987, the IIS started to work on perceptual audio coding in the framework of the EUREKA project EU147, Digital Audio Broadcasting (DAB). In a joint cooperation with the University of Erlangen (Prof. Dieter Seitzer), the IIS finally devised a very powerful algorithm that is standardized as ISO-MPEG Audio Layer3 (IS 11172-3 and IS 13818-3).

In all international listening tests, Layer 3 impressively proved its superior performance, maintaining the original sound quality at a data reduction of 1:12 (around 64 kbit/s per audio channel). If applications may tolerate a limited bandwidth of around 10 kHz, a reasonable sound quality for stereo signals can be achieved even at a reduction of 1:24.

For the use of low bit-rate audio coding schemes in broadcast applications at bitrates of 60 kbit/s per audio channel, the ITU-R recommends Layer 3.

The experts at Fraunhofer IIS have developed various real-time Layer 3 systems. They offer:

- technical consulting

- real-time knowhow for various DSP architectures
- advanced C sources for MPEG-1 and MPEG-2 Layer 3
- support with Layer 3 implementations, e.g. by training-on-the-job lessons
- development of prototype hardware
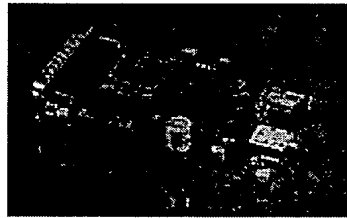- development of special features (e.g. error protection, ancillary data processing, channel interfacing)

Please contact layer3@iis.fhg.de for more information.

MPEG Audio Layer 3: High-Quality Low-Bitrate Music in Multimedia Applications

Without data reduction, one minute of "CD-quality" stereo music needs around 12 MByte storage capacity; with Layer 3, one minute stereo music needs only 1 MByte, without audible degradation.

Therefore, Layer 3 is the logical choice for memory-sensitve applications, like soundtracks for games, animation software, hypermedia documents, audio-on-demand servers, Flash-ROM music memories, and the like. Using Layer 3, a CD-ROM may contain 15 hours stereo music or even 60 hours natural speech (e.g. for "talking books").

Layer 3 encoders and decoders are available either as software or as hardware products.

This is a laboratory type decoder board. In the meantime products are available from various manufactureres. Please contact manufacturers directly for standard products ! Among them:

- Dialog 4 PC boards
- TELOS Professional Codec Hardware
- and more ...

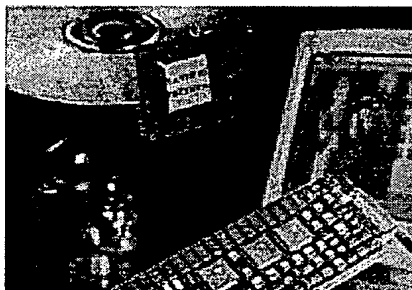Please contact layer3@iis.fhg.de for more information.

MPEG Audio Layer 3: Multichannel Audio Coding

One of the most fascinating recent achievements in audio processing is multi-channel sound reproduction. Compared to the traditional presentation of two-channel stereophonic signals, multi-channel sound creates ambience and exhibits an excellent image stability. Five-channel sound is the designated successor of the classic two-channel sterophony. Applications may aim at HDTV, but also at DAB or CDAD (Cable Digital Audio Distribution).

The MPEG-2 extension to the international standard defines means for the low bit-rate coding of five audio channels plus one low frequency enhancement channel (LFE). It supports also additional features, e.g. 7 multi lingual channels within one programme.

Developed by IIS, the superior sound quality of Layer 3 coding can be applied to 5+1 channels at bitrates up to 1.002 kbit/s. Which is still less than that of a conventional 16-bit stereo information (1.536 kbit/s), thus sustaining full backwards compatibility for stereo reproduction.

The IIS is developing hardware for a realtime multichannel audio codec and contributes on algorithm development for a MPEG-2 non backward compatible mode (NBC).

Please contact layer3@iis.fhg.de for more information.

Contact

ADDRESS
Fraunhofer Institut für Integrierte Schaltungen-A
Am Weichselgarten 3; D-91058 Erlangen; Germany
Tel.: +49 (0) 9131/776-301; Fax: +49 (0) 9131/776-399
EMAIL: layer3@iis.fhg.de; http://www.iis.fhg.de/audio/

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